

Technology Deployment Initiatives and Partnership Program

Request for Funding

FY 2002

FHWA Strategic Goal Area: Productivity

Project Title: Communication system for transmitting road system information from remote sites in Denali National Park

Problem Statement: Denali National Park is one of the nations most pristine parks and one of the most remote. Increasing public use of the Park and interest in its preservation has placed additional needs on maintaining its road infrastructure, while preserving the natural conditions of the Park. As use of park facilities increases, conflict between various users and operations of the park becomes more of an issue for Park staff to deal with on an ongoing basis. Remote conditions of the Park and its road system present traveler-safety challenges to bus operators, and the general public accessing Park resources. Information on snow levels, necessary to set plowing schedules to meet opening dates set years in advance, is vital in the spring. Spring road, load bearing capacities need to be know to avoid road damage that would endanger everyone traveling on the road. Obtaining information about the natural Park environment, impacts from public access and natural changes taking place also present challenges to Park management and the scientific community studying the natural systems in the Park. One of the common links amongst all of these user groups and issues is the need for more information, and more timely information to help manage Park resources supporting public access, the general Park traveler, and the scientific community working in the Park.

Proposal: Bring together the various groups working in or around Denali National Park, with a common need for economic data access and provide an integrated data collection network that will support the data collection activities of multiple user groups. Until the advent of ultra low frequency radio there was no practical way to send data along the Park road corridor as the topography made uninterrupted radio signals next to impossible and/or prohibitively expensive. Radio data transmission system will connect existing data gathering sites and allow for expansion. Partners in the system will be; Denali N.P. Roads and Trails Department, Denali N.P. Long Term Ecological Studies Group (LTEM), State of Alaska Geotechnical Section, State of AK. Commercial Vehicle Traffic Division, State of AK. Bridge Monitoring Program, Alaska Railroad, and GW Scientific.

Benefits: This effort involves the demonstration of radio telemetry, and integrated data-transfer systems. It also demonstrates the benefits of remote data collection for operations and maintenance of road equipment systems, travel-safety data collection, and shared data collection resources.

<u>Resources/Cost:</u>	<u>FY-02</u>	<u>FY-03</u>
FLH Contract services	\$103,000	\$21,000
FLH Project travel	\$ 9,000	\$ 4,000

FLH coordination	380 hours	150 hours
Denali N.P. supplies, equipment and labor	\$ 60,000	\$ 25,000
State of Alaska labor, equipment, and supplies	\$ 15,000	\$ 20,000
Alaska Railroad equipment and use of facilities	\$ 10,000	\$ 20,000
GW Scientific mechanical electrical engineering	90 hours	30 hours
Total project costs all partners	<u>\$350,000</u>	<u>\$100,000</u>
Total TDIP funds requested	\$112,000	\$25,000

Duration: Initial installation and activation of backbone equipment during 2002 season. Further connection by partners and testing of the system during 2003. Final report on use and benefits winter 2003.

Organization/Method: Partnership with the above parties to install and activate the system hardware and software within Denali National Park. Each partner will implement within its organization and operate using the backbone system. By contract the backbone will be purchased, installed and tested during operation for all partners.

Submitter:

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